

CALIFORNIA GEOLOGICAL SURVEY  
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# GEOLOGIC MAP OF THE GLEN ELLEN 7.5' QUADRANGLE SONOMA COUNTY, CALIFORNIA: A DIGITAL DATABASE

VERSION 1.0

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Digital Database  
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1. California Geological Survey, 801 K st. MS 12-31, Sacramento, CA 95814  
2. William Lettis & Associates, Inc., 1777 Botello Drive, Suite 262, Walnut Creek, CA 94596



## Unit Explanation

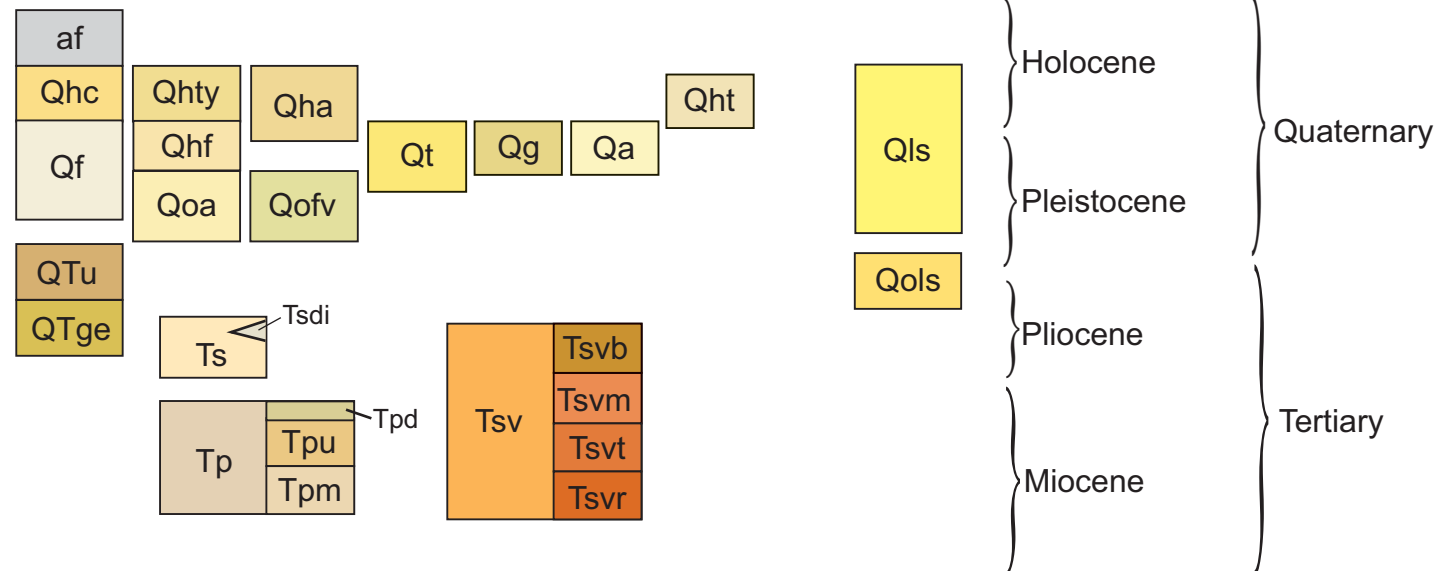
(See Knudsen and others (2000), for more information on Quaternary units).

af	Artificial fill.
ac	Artificial stream channel.
Qhc	Late Holocene to modern (<150 years) stream channel deposits in active, natural stream channels. Consists of loose alluvial sand, gravel, and silt.
Qhty	Latest Holocene stream terrace deposits. Stream terraces are deposited as point bar and overbank deposits by Sonoma Creek.
Qht	Holocene stream terrace deposits along Sonoma Creek.
Qhf	Holocene alluvial fan deposits. Sand, gravel, silt, and clay deposited by streams emanating from canyons onto alluvial valley floors. Sediment is poorly to moderately sorted and bedded.
Qha	Holocene alluvium, undivided. Alluvium deposited on fans, terraces, or in basins. Sand, gravel, and silt that are poorly sorted.
Qg	Fluvial gravel composed almost exclusively of Sonoma Volcanic clasts and fragments of diatomite 10 to 20 cm across. These uplifted deposits are identical to Qt along Sonoma Creek near Glen Ellen.
Qls	Landslides. Includes debris flow and block slump landslides. Arrows show the direction of movement.
Qa	Latest Pleistocene to Holocene alluvium in small valleys. Sand, gravel, silt and clay.
Qt	Latest Pleistocene to Holocene stream terrace deposits. Sand, gravel, silt and minor clay. Relatively flat, undissected stream terraces where absolute age is uncertain.
Qf	Latest Pleistocene (<30,000 years) to Holocene alluvial fan deposits. Sand, gravel, silt, and clay mapped on gently sloping, fan-shaped, relatively undissected alluvial surfaces. Qfc - Fan of Carriger Creek consisting of cobble gravel rich in well-rounded volcanic clasts.
Qoa	Early to late Pleistocene alluvial deposits, undivided. Alluvial fan, stream terrace, basin, and channel deposits. Topography is gently rolling with little or no original alluvial surfaces preserved; moderately to deeply dissected.
Qof	Early to late Pleistocene alluvial fan deposits. Sand, gravel, silt and clay.
Qofv	Early to late Pleistocene alluvial fan deposits. Predominantly volcanic gravel with clasts up to 0.5m in diameter. Topography is moderately rolling with little or no original alluvial surfaces preserved. Deeply dissected.
Qols	Older, deeply dissected landslides.
QTu	Unnamed gravel, sand, reworked tuff and clay of unknown age. Sediments derived mostly from the Sonoma Volcanics.
QTge	Glen Ellen Formation. Gravel, sand, reworked tuff and clay of unknown age. Sediments derived mostly from the Sonoma Volcanics. Obsidian pebbles are characteristic of this unit.
Ts	Sand and gravel, tuff and diatomite. Rich in both Franciscan and Sonoma Volcanic detritus. Contains tuff dated at 4.8 +/- 0.03 Ma (J. Allen, Written communication).

Petuma (?) Formation. A predominantly fluvial deposit with lacustrine diatomite, lignite, and tuff. Maybe correlative with the upper part of the Petaluma Formation on the Sears Point and Petaluma River quadrangles.
Tpu - A predominantly fluvial siltstone, that contains diatomite, tuff, and gravel. The gravel contains siliceous shale chips from the Monterey Formation. Tpu may be correlative with the upper part of the Petaluma Formation west of the Rodgers Creek Fault. Tpd - A diatomite-rich facies of the Upper Petaluma Fm. Also contains tuff interbeds.
Tpm - Middle part of the Petaluma Formation west of the Rodgers Creek Fault. Characterized by gravel rich in Franciscan detritus.

Sonoma Volcanics- Mafic lava flows, breccias, agglomerate tuff, tuff breccia with interbedded tuffaceous sediments; also includes dacitic to rhyolitic lava flows, debris flows, tuff, and tuffaceous sediment. The age range for the Sonoma Volcanics on this quadrangle is 0.65 to 3.80 Ma (Fox and others, 1985). There is a diatomite-rich sequence within the Sonoma Volcanics (Tsvd). The Sonoma Volcanics are divided into the following subunits:
Tsvb- Basalt flows. The basalt flows near Carriger Creek yielded an Ar/Ar date of 4.1 Ma (Robert Fleck, Personal communication, 2004).
Tsvm- Mafic flows and breccias. Andesite and basaltic andesite.
Tsvt- Silicic tuff and interbedded tuffaceous sediments. Interbedded sand and gravel is similar to the Petaluma Formation.
Tsvr- Rhyolitic to dacitic flows, breccias, and sediments. Pink, white, gray, brown flow banded rhyolite in flows, debris flows and breccia. Interbeds of sand, gravel, and tuff. Dacite near Carriger Creek is dated at 5.79 +/- 0.3 Ma; Robert Fleck (Personal communication, 2004).

## Unit Correlation



## Symbol Explanation

-----3	Contact between map units - Solid where accurately located, dashed where approximately located; short dash where inferred; dotted where concealed; queried where uncertain.
127-----3	Fault - Solid where accurately located, dashed where approximately located; short dash where inferred; dotted where concealed; queried where uncertain. U = upthrown block, D = downthrown block. Arrow and number indicate direction and angle
▲-----▲	Thrust fault- Solid where accurately located; dashed where approximately located; short dash where inferred; dotted where concealed; queried where uncertain.
-----	Anticline - Solid where accurately located.
-----	Syncline - Solid where accurately located.
-----	Plunging syncline - Solid where accurately located.
-----	Overturned Syncline - Solid where accurately located.
-----	Strike and dip of sedimentary beds:
25	Inclined
25	Vertical
25	Overturned
25	Approximate
25	Strike and dip of foliation
-----	Landslide - Arrows indicate principal direction of movement. Queried where questionable. A megalandslide occurs in the west part of the quadrangle. It displays a well-developed headwall scarp but its full extent is difficult to ascertain. Because it is a large block landslide, geologic units can be mapped within it. This slide is shown by a stipple pattern. Its full extent may be considerably greater than shown on this map.
★	Abandoned oil and gas well

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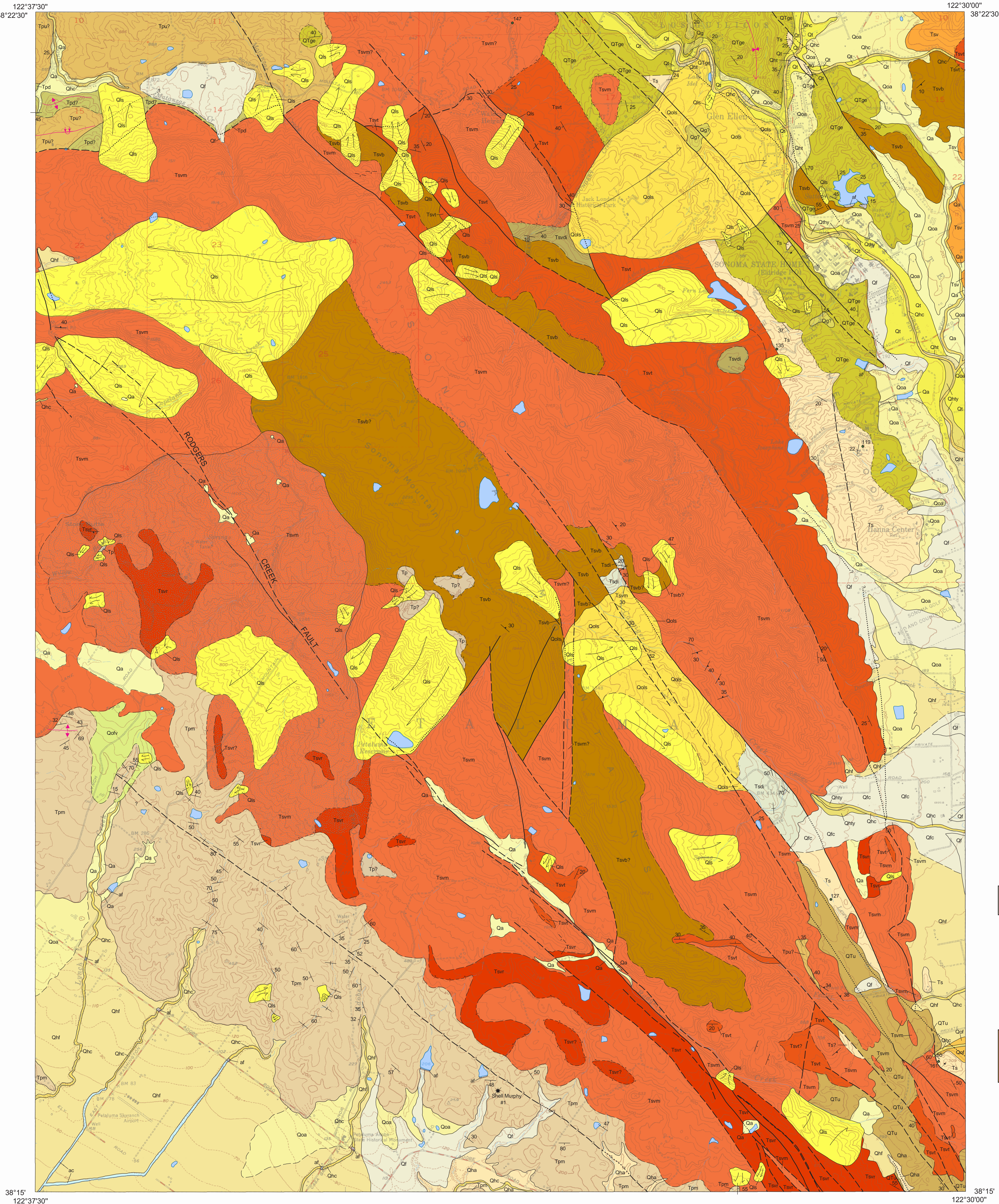
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